**K-5 Math Lesson Plan**

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| **Teacher: Smithey** | | | | | **Grade:** 3rd | | | **Date(s)**: August 28, 2012 |
| **Unit Title:** Unit 1**-**Place Value with Addition and Subtraction within 1,000 | | | | | | **Corresponding Unit Task:** Taught prior to Performance Task 1; ***This lesson will mainly focus on rounding, but can be used to practice fluency with addition and subtraction using place value.*** | | |
| **Essential Question(s):** How does place value understanding help me add and subtract numbers? What strategies can I use to add and subtract multi-digit numbers? Why do I need to know multiple strategies to add and subtract numbers? | | | | | | | | |
| **Materials/Resources** | | | | | | **Essential Vocabulary** | | |
| **Teacher:**  -Time (or online timer)  -Masking tape  -21 5x7 index cards  -2 4x7 index cards  -Classroom number line posted  -Number line sheet using links below (copy sheet with just 4 number lines on them ranging in values. Also add a dot or missing number box, one per number line)  -Rounding rules poster  -At least 3 sets of Task Cards #s1-5  -Vocabulary Cards (provided by C&I)  Websites**:**  <https://ccgps.org/3.NBT_MP20.html>  <http://themathworksheetsite.com/numline.html>  <http://www.internet4classrooms.com/skill_builders/rounding_estimating_math_third_3rd_grade.htm>  <http://www.ixl.com/math/grade-3> | | | **Student:**  -1, 4x6 index card (half with a red dot, half with a blue dot)  -Number line sheet  -2 to 4 4x6 index cards (extension)  -21 5x7 index cards (extension) | | | | add, addition, addend, sum, place value, hundreds, tens, ones, estimate round, about, approximately, subtract, subtraction, difference  subtract, subtraction, difference | |
| **Learning Experience** | | | | | | | | |
| **8 Mathematical Practices:**   * 1. Make sense of problems and persevere in solving them. * 2. Reason abstractly and quantitatively. * 3. Construct viable arguments and critique the reasoning of others. * 4. Model with mathematics. * 5. Use appropriate tools strategically. * 6. Attend to precision. * 7. Look for and make use of structure. * 8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**  **3.NBT.1** *Use place value understanding to round whole numbers to the nearest 10 or 100.* | | | | | | | |
| **I Can Statement(s):**  -I can count by 10s to 100.  -I can count by 10s between 100 and 200.  -I can locate numbers on a number line.  -I can use my place value knowledge to round whole numbers.  -I can round whole numbers to the nearest ten.  -I can round whole numbers to the nearest hundred. | | | | | | | |
| **Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)  Have each group go to the carpet to leave a large area free within the room for the floor number line. Set the objectives for today by reading aloud the “I can” statements. Tell students that they are going to learn how to round or estimate to the nearest 10 and 100 today because we need to estimate lots of things in the real world, offer examples: Time, shopping, cooking, etc.  \*\*Before the beginning of the lesson, place a long line of masking tape on the floor as it will become a working number line 0-200. Also, each on a 5x7 index card, write numbers 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200.  \*\*Place the 0, 100, and 200 on either end of the number line along the masking tape and tell students we are going to be working with a number line today to help us estimate. It ranges from 0 all the way to 200 counting by 10s. Allow students the opportunity to count by 10s with you to 200. (When repeating the lesson—allow students the opportunity to count by 100s with you to 1,000.  Pass out remaining 5x7 index cards to students. Call out numbers by groups to come up and fill in the number line by 10s. For example: If your number is smaller than 50, come up and fill in the number line. If your number is between 50 and 100, etc. They may not help each other-- Instruct students to stand by their number when they have finished with their number placement. When all the students have placed a number, allow them a moment to space out evenly.  \*Online Timer: <http://www.online-stopwatch.com/> | | | | | | | |
| **Teacher Directed:**  Teacher will model aloud skip counting by tens. If students agree with the way the teacher is counting—thumbs up. If there is an area that needs attention, students should show a thumbs down. When thumbs down is shown by any student—allow students to offer reasoning as to where is belongs and *why. What place value helps you determine which number comes first?* Model thinking out loud and providing students with a response.  Have students return to the whole group.  Prepare in advance two examples of your own 4x7 index cards. Use the numbers: 34 and 157. Display the rounding rules up in the room. Model rounding by 10s with 34.  *If I am rounding to the 10s place, first I am going to visualize where that number is on the number line.* Teacher should model skip counting out loud, *10, 20, 30, 40…oh wait, my number is in the thirtys, so I am going to start at 30.* Teacher walks over to the number line on the floor and continues to think aloud. *35 is half way so I am going to find 30 and 40, go to the middle of those numbers and take one step closer to 30. If I am rounding to the tens place, I am going to look on both sides. I have a 30/40. I am closer to 30 so I am going to stand behind the 30 since I am rounding to the closest group of ten.*  Model rounding strategy from Rounding Rules poster. Underline the place you are rounding to, circle the number to the right. 0, 1, 2, 3, 4 rounds down. 5, 6, 7, 8, 9 rounds up.  Repeat for the number 157 rounding to the tens place. | | | | | | | |
| **Guided Practice:**  Pass out 4x6 index cards-one per student. Have half the class write any number between 0-100 (blue dot) and the other half of the class writes any number between 100-200 (red dot). Let them know their number cannot be one of the ones placed in the number line.  Have students trade numbers with a partner of the opposite color, (red/blue). Partner A has to walk up to the number line and find where the number falls. Partner B checks behind him/her. Partner B looks between the two groups of tens on either side of Partner A and visually sees which ten they are closest to. The Partners return to their seats and show the rounding rule the index card. On the back Partner A writes “About” or “Approximately” the rounded number underneath the origonal number. Reverse roles with Partner B’s index card.  While students are working, teacher is going around, monitoring students progress and helping to correct misconceptions. Make sure students know why a number rounds up or down due to place value and location on a number line.  \*\*If time allows, repeat lesson with rounding numbers between 100 and 200 to the hundreds place only with TD and GP. When repeating, students can use the back of their 4x6 index card to complete numbers between 100-200. | | | | | | | |
| **Independent Practice:**  Each student should get a clipboard and work independently somewhere in the room. Pull students for small group instruction based on their index cards (see below under assessment) while the other students use the task cards to complete their sheet independently. Make a set of task cards for each group for individual students to look at, at their own pace. Students may refer back to floor number line at any time during the tasks.  Task 1: Fill in the missing numbers along the 4 number lines. Task 2: Round each of the missing numbers in Number Lines #1, #2, and to the tens place. Round each of the missing numbers in number Lines #3, #4 to the hundreds place. Task 3: Check your rounding of each missing number on a calculator. Task 4: Show how to round each number in two ways from the previous problems.  When students are done with their tasks, they may proceed to math stations. | | | | | | | |
| **Closing/Summarizing Strategy:**  Reflect back on the specific EQs from the unit that were addressed in this lesson. *How does place value understanding help me add numbers?*  *What strategy can I now use to add multi-digit numbers?*  *How could you use this strategy with subtraction? Explain.*  Provide the examples for APK: Sometimes we need to estimate time for cooking or when we go shopping-the costs of items. See if students can come up with more accurate examples than in the beginning and explain their reasoning: Example: Maybe I only have $40 for toys and one toy is $17 and the other is $14, I would have to estimate each number to decide if I would have enough money. | | | | | | | |
| **Differentiation Strategies** | | | | | | | | |
| **Extension** | | **Intervention** | | **Language Development** | | | | |
| * Allow students to create their own number line in a small group using more difficult numbers * Create a number line sheet with more challenging numbers. | | * Modified number line sheet with simpler numbers * Use a calculator to check the exact and rounded value * Give students the index cards for placement on the number line you know they can handle | | * Pre-teach vocabulary within the lesson. * Have an individual number line available for student use. * Small vocabulary cards available for use at their immediate work area. | | | | |
| **Assessment(s):**  -Teacher should collect the index cards from each student as well as the number line sheet from each student  -Reflect upon written notes from teacher observations and questioning (specific student responses-understandings and misconceptions) Sort index cards into rounded correctly/incorrectly in order to pull for small groups. | | | | | | | | |
| **Teacher Reflection:** (Next steps?)   * What went well? * Student understandings/misconceptions * Specific notes about students’ thinking * What do I need to reteach/review tomorrow or in the future? * New ideas or changes for next time | | | | | | | | |